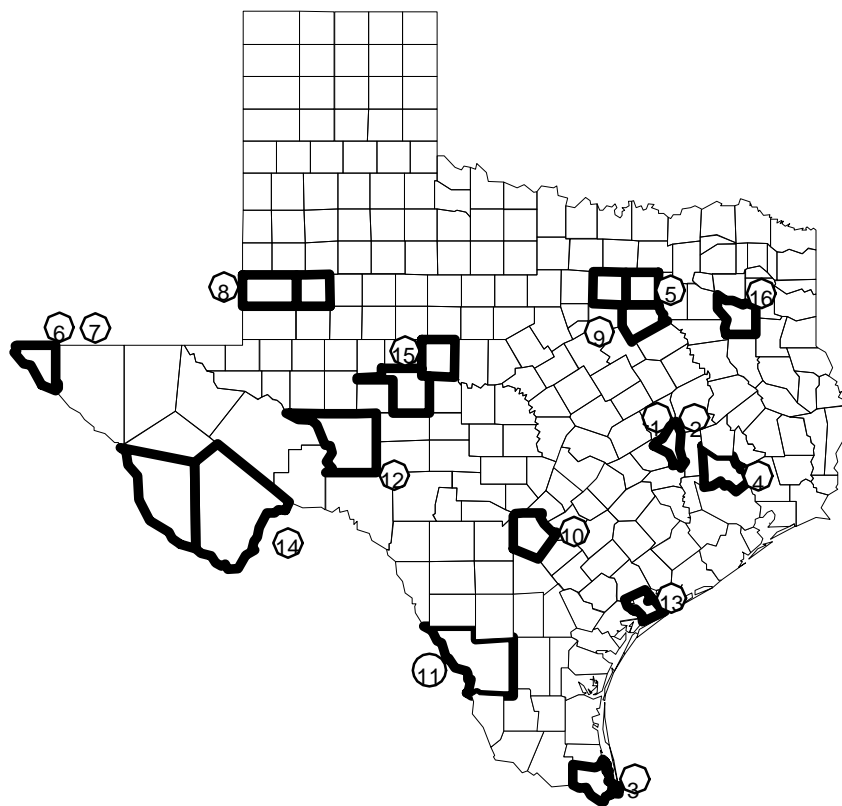


# Birth Defect Investigations Conducted in 1998

By the Texas Birth Defects Monitoring Division,  
the Health Studies Program,  
and/or the Bureau of Epidemiology,  
Texas Department of Health

## Figure 1. Counties In Which Birth Defect Clusters Were Investigated



## Introduction

Health care professionals, parents, and others can report apparently unusual concentrations of birth defects to the Texas Birth Defects Monitoring Division (TBDMD). Birth defect investigations are then initiated to determine if these reported birth defects represent a rate that is higher than expected for a given area. A glossary defining the birth defects mentioned in this report is available by phoning 512-458-7232.

In the calendar year 1998, the Texas Department of Health (TDH) conducted a total of 16 investigations of birth defect clusters. Of 9 initiated in previous years, 3 were concluded in 1998 (see items 4, 5, and 9). Six of the seven investigations that began in 1998 were still open as of the end of the calendar

Figure 2: Birth Defects Investigated

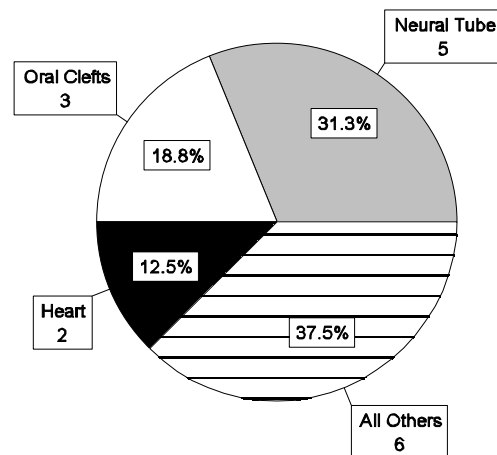
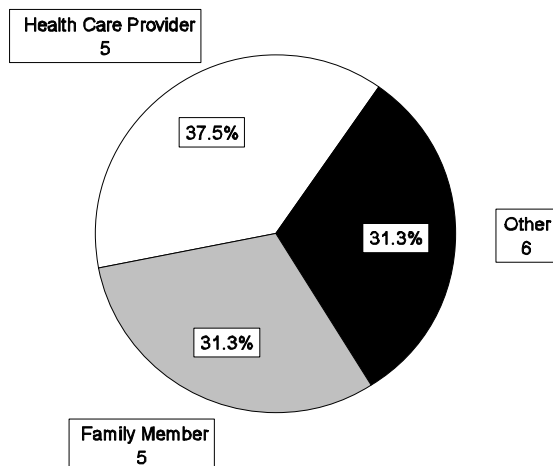


Figure 3: Sources of Reports



year, and will continue into 1999 (see items 2, 3, 13, 14, 15, and 16).

Nearly one-third of the reports investigated ((Items 1, 3, 4, and 5) concerned neural tube defects (NTDs) (Figure 1). Approximately 19% of all reports (3 reports) investigated in 1998 concerned oral clefts (Item 8, 12, and 14).

Reports of suspected or perceived birth defect clusters come from health care professionals, concerned family members, and others in the community. Figure 3 shows the sources of reports investigated in 1998.

### 1) Bryan and College Station (Brazos County)

**Condition of Concern:** *Anencephaly*

**Time Period of Concern:** 1981 - 1996

**Background:** A resident of College Station contacted the Texas Department of Health with concerns about anencephaly. He stated that there had been 20 pregnancies affected by anencephaly in his neighborhood. No specific time period of concern was mentioned.

**Response:** Vital records (birth, fetal death, and death certificates) were searched to identify all pregnancies affected by anencephaly among residents of Brazos County in 1981-1996. Six affected pregnancies were identified. Five such infants or fetuses were delivered to residents of Bryan and one to a resident of rural Brazos

County. Observed to expected (O:E) ratios, unadjusted as well as adjusted for maternal age and for maternal race/ethnicity, were calculated. The 95% confidence intervals for all O:E ratios included the value of 1.00, indicating that no statistically significant excess of anencephaly was observed in Brazos County, the city of Bryan or the city of College Station from 1981 through 1996. After the Texas Department of Health reported these findings, the investigation was reopened when a concerned parent provided the names of an additional 5 families who had a pregnancy affected by anencephaly. Vital records were searched, and birth, death, or fetal death certificates were found for 4 of these 5 children. Two were not detected in the initial investigation; one was reported on the death certificate to have died of encephalocele, rather than anencephaly, and the other was listed as a resident of Travis County. Two records listed anencephaly as the cause of death and were reported as born to residents of

Bryan; these two were detected in the initial investigation. The investigation is ongoing.

**Duration of Investigation:** March 1997 - December 1998.

2) **Brazos County**

**Conditions of Concern:** *Hypoplastic left heart syndrome*

**Time Period of Concern:** July 1997 - December 1997

**Background:** In May of 1998, a resident of Brazos County contacted TDH about a perceived high number of infant deaths due to hypoplastic left heart syndrome in the county. Three such deaths were reported. Based on California Birth Defects Monitoring Program (CBDMP)<sup>1</sup> rates, this was 11.9 times the number expected and was statistically significant.

**Response:** TDH is investigating to (a) confirm these reports and (b) ascertain and confirm any additional occurrences of hypoplastic left heart syndrome in the county. The investigation is ongoing.

**Duration of Investigation:** May 1998 - December 1998.

3) **Cameron County**

**Condition of Concern:** *Neural tube defects*

**Time Period of Concern:** February 1998 - October 1998

**Background:** A staff member from a local newspaper contacted TDH about a possible increase in infants born affected by neural tube defects (NTDs) in Brownsville and elsewhere in Cameron County in 1998. He reported that 9 affected pregnancies had been identified from February through July.

**Response:** Case finding and verification were undertaken using data from the Texas Neural Tube Defect Surveillance and Intervention Project. The 9 reported affected pregnancies were verified. As of December, a total of 13 affected infants or fetuses were confirmed as having been

---

<sup>1</sup>Because Texas did not yet have a statewide Birth Defects Registry in 1998, expected rates were calculated using data from the California Birth Defects Monitoring Program (CBDMP) and/or the Metropolitan Atlanta Congenital Defects Program (MACDP).

delivered in February through October. The large number of infants or fetuses with neural tube defects delivered to mothers resident in Cameron County ended a downward trend observed there since 1994. However, the excess occurrence from February to October of 1998 was not statistically significant. The investigation is ongoing.

**Duration of investigation:** July 1998 - December 1998.

4) **Conroe (Montgomery County)**

**Condition of Concern:** *Anencephaly*

**Time Period of Concern:** Not applicable

**Background:** The grandparent of a child with anencephaly was concerned that the birth defect might have been related to pollution from a nearby creosoting plant.

**Response:** Because the plant was a known pollution source, and because of previous community concerns regarding creosoting facilities, the informant's well water was tested for likely contaminants related to creosoting. Community air samples were also analyzed. For all compounds that were evaluated (various organic and inorganic compounds, including selected metals), adverse health effects would not be expected with exposure to the concentrations reported. No further action is required at this time.

**Duration of Investigation:** January 1997 - April 1998.

5) **Dallas (Dallas County)**

**Condition of Concern:** *Neural tube defects*

**Time Period of Concern:** 1990 - 1994

**Background:** A parent contacted TDH about his child's neural tube defect (encephalocele listed at birth in 1992, anencephaly listed on the death certificate). He was concerned that this might have been related to his and his wife's prior lead exposure from a lead smelter in the area.

**Response:** TDH staff reviewed medical records provided by the parent, searched vital records for all cases of neural tube defects in the areas closest to the lead smelter between 1990 and 1994, reviewed the medical and scientific literature for evidence of an association between human lead exposure and occurrence of neural tube defects, and examined the data on human and environmental lead levels in the area surrounding the smelter. No excess occurrence

of neural tube defects was found. Little evidence was found that prior parental exposure to lead would cause the health problems of concern. No further action is required at this time.

**Duration of Investigation:** August 1997 - January 1998.

**6) El Paso (El Paso County)**

**Condition of Concern:** *Biliary atresia*

**Time Period of Concern:** 1992 - 1997

**Background:** A parent reported that 6 babies with biliary atresia had been born in El Paso from 1992 - 1997. He was concerned that this was excessive. Based on rates from CBDMP, this was within the limits of what would have been expected. However, the parent felt that there may have been more affected children than those he had reported.

**Response:** Further case finding and case verification are underway.

**Duration of Investigation:** September 1997 - December 1998.

**7) El Paso (El Paso County)**

**Condition of Concern:** *Multiple defects*

**Time Period of Concern:** 1994 - 1997

**Background:** A physician contacted TDH, concerned that he was seeing an abnormally high number of children with hypoplastic left heart syndrome, various intestinal interruptions, and cancer.

**Response:** Further information is being gathered.

**Duration of Investigation:** May 1997 - December 1998.

**8) Gaines and Dawson Counties**

**Conditions of Concern:** *Cleft lip and cleft palate*

**Time Period of Concern:** 1991 - 1996

**Background:** In March of 1995, a parent contacted TDH about a potential excess of cleft lip and cleft palate. Three affected infants were reported as having been born to Gaines County residents in 1994-1995. Based on CBDMP rates, this was 16.0 times the number expected and was statistically significant. Reports of possibly excessive

numbers of babies born with cleft lip and/or palate in neighboring Dawson County resulted in expanding the investigation to include it as well.

**Response:** TDH identified a total of 11 infants with cleft lip and cleft palate delivered to residents of either Gaines or Dawson Counties from 1991-1996. Based on CBDMP rates, this was more than twice the number expected and was statistically significant. Most of this appeared to be due to a significant excess of children born with cleft lip, with or without cleft palate, in Gaines County. The investigation is ongoing.

**Duration of Investigation:** March 1995 - December 1998.

**9) Grand Prairie (Dallas, Ellis, Tarrant Counties)**

**Condition of Concern:** *Multiple defects*

**Time Period of Concern:** 1994 - 1996

**Background:** A concerned parent contacted TDH regarding a perceived excess of miscarriages and birth defects in a subdivision of Grand Prairie. The reported birth defects included one child born with Klinefelter syndrome and 2 with Down syndrome. Making meaningful conclusions from the one occurrence of Klinefelter syndrome is difficult. The 2 occurrences of Down syndrome were fewer than the 2.7 that would have been expected in Grand Prairie as a whole, based on CBDMP rates.

**Response:** TDH compared all birth defects found on birth certificates, fetal death certificates, and death certificates for Grand Prairie in 1994-1996 with the number expected from the State of Texas. No statistically significant excess was found. No further action is required regarding the reported birth defects or birth defects in this area in general.

**Duration of Investigation:** August 1996 - January 1998.

**10) Kelly Air Force Base (Bexar County)**

**Condition of Concern:** *Multiple defects*

**Time Period of Concern:** 1990 - 1995

**Background:** The Agency for Toxic Substances and Disease Registry (a U.S. Public Health Service agency) requested TDH to conduct a public health assessment in a 3 zip code area around Kelly Air Force Base. Adverse reproductive outcomes were of interest, including birth defects, low birth weight, and miscarriages.

**Response:** Since the Texas Birth Defects Registry only began coverage of San Antonio in 1997, TDH staff examined vital records from 1990-1995 for the 3 zip code area. This was compared with rates derived from the same types of vital records for the entire State of Texas. The investigation is ongoing.

**Duration of Investigation:** October 1997 - December 1998.

#### 11) Laredo (Webb County)

**Condition of Concern:** *Neural tube defects (NTDs)*

**Time Period of Concern:** January 1997 - December 1997

**Background:** TDH birth defects surveillance personnel noticed that residents of Laredo seemed to be experiencing high rates of neural tube defects among deliveries in 1997.

**Response:** Since the pregnancies affected by neural tube defects were identified in an active surveillance system, all were confirmed. There was a statistically significant excess of anencephaly (2.7 times what would have been expected) and NTDs as a whole (2.1 times expected) among deliveries to Laredo residents in 1997. These rates were similar to what occurred there in 1993. This region is included in the ongoing Neural Tube Defect Project, which investigates causes of NTDs. Also, a folic acid education program was undertaken. No further action is required at this time.

**Duration of Investigation:** January 1998.

#### 12) Ozona (Crockett County)

**Condition of Concern:** *Cleft lip and cleft palate*

**Time Period of Concern:** August 1994 - November 1994

**Background:** A health care provider notified TDH that she had seen 3 infants with cleft lip and palate born in Ozona during 1994. Further information gathering revealed that 2 were born to mothers actually residing in Ozona. Since the town has a low birth rate and both babies were born within a 4-month period, this was roughly 158 times what we would have expected based on rates from the CBDMP. This observation was statistically significant.

**Response:** To confirm the report and identify any additional cases, Texas Birth Defects Monitoring Division staff reviewed hospital medical records for all 44 deliveries to residents of Crockett County during 1994. The 2 initially reported among Ozona residents were confirmed. No additional cases were detected among residents of Ozona or Crockett County. The investigation is ongoing.

**Duration of Investigation:** September 1997 - December 1998.

#### 13) Port Lavaca (Calhoun County)

**Conditions of Concern:** *Gastroschisis*

**Time Period of Concern:** 1995 - 1998

**Background:** In February of 1998, a nurse contacted TDH about a higher than expected number of occurrences of gastroschisis in Port Lavaca. Three affected pregnancies were reported. Based on CBDMP rates, this was 14.2 times the number expected and was statistically significant.

**Response:** TDH has confirmed the report and is investigating to ascertain any additional cases in the county. The investigation is ongoing.

**Duration of Investigation:** February 1998 - December 1998.

#### 14) Presidio and Alpine (Presidio and Brewster Counties)

**Condition of Concern:** *Cleft lip and cleft palate*

**Time Period of Concern:** October 1997 - February 1998

**Background:** A concerned physician reported 3 infants with cleft lip and palate (2 among residents of the city of Presidio, one case a resident of Alpine) born from October 1997 through February 1998. The physician expressed concern over river water as a possible cause of these birth defects. Based on rates from the CBDMP, this was roughly 55 times what we would have expected for the city of Presidio, 35 times what we would have expected for Presidio County and 26 times what we would have expected for Presidio and Brewster Counties combined. These observations were statistically significant. Observations for Alpine and for Brewster County alone were not statistically significant.

**Response:** Since the geographic area and time period of concern are covered by the Texas Birth Defects Registry, we will use registry data to verify these reports and identify any additional cases in Presidio and Brewster Counties. Collection of registry data for 1997 and 1998 is still underway. Therefore, the investigation is ongoing.

**Duration of Investigation:** May 1998 - December 1998.

**15) San Angelo and Ballinger (Tom Green and Runnels Counties)**

**Condition of Concern:** *Hypoplastic left heart syndrome, tetralogy of Fallot, and transposition of the great arteries*

**Time Period of Concern:** June 1997 - December 1997

**Background:** A nurse from a hospital nursery department reported her concern over the number of babies born with birth defects. She provided information on 5 infants born with various heart defects, one with an abdominal tumor, and one with “colloid syndrome” (actually a collodion baby). (The child with an abdominal tumor also had a heart defect). All infants were born to residents of San Angelo or Ballinger. No calculations were performed on the occurrence of collodion baby nor the abdominal tumor. The heart defects reported included 2 cases of hypoplastic left heart syndrome, one case of tetralogy of Fallot, and one case of transposition of the great arteries.

Tetralogy of Fallot and transposition of the great arteries were categorized together as conotruncal heart defects. Based on rates from the CBDMP and the MACDP, the 2 children born with conotruncal heart defects in different geographic areas were approximately 2 to 3 times what we would have expected, but the finding was not statistically significant. The births of 2 children with hypoplastic left heart syndrome were approximately 3 to 144 times what we would have expected, and the findings were statistically significant for the city of Ballinger, Runnels County alone, and Tom Green and Runnels Counties combined.

**Response:** Since the geographic area and time period of concern are covered by the Texas Birth Defects Registry, we will use registry data to confirm reports and ascertain any additional cases occurring in Tom Green and Runnels Counties. Collection of registry data for 1997 is still underway. Therefore, the investigation is ongoing.

**Duration of Investigation:** June 1998 - December 1998.

**16) Smith County**

**Conditions of Concern:** *Down syndrome.*

**Time Period of Concern:** June 1998 - May 1999 (includes prenatally diagnosed Down syndrome)

**Background:** In September of 1998, a social worker contacted TDH about a perceived excess occurrence of Down syndrome in Smith County. Nine affected pregnancies were reported, 2 of which were prenatally diagnosed. Based on CBDMP rates, this was 2.7 times the number expected and was statistically significant.

**Response:** TDH is investigating to (a) confirm reports and (b) ascertain and confirm any additional cases in the county, using data from the Texas Birth Defects Registry. The investigation is ongoing.

**Duration of Investigation:** September 1998 - December 1998.